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ABSTRACT OF THE DISCLOSURE

A description of an adaptable multiuser processing unit applied to Direct-Sequence Code Division Multiple Access (DS-CDMA) is disclosed. The adaptable multiuser processing unit consists of cascade filters where each filter is adapted independently. The adaptation of a first filter is based on the error between the output of the first filter and a desired signal, in the same way for the other filters. The adaptation is realized follow a direct, without channel identification, or indirect, with channel identification, procedure. The first filter receives the input signal in Baud ($1/T$) or Fractionally (k/T) spaced and the last filter gives to the MUD output the decisions on the symbols estimated for each users. A decision feedback may be applied to the input of each filter such as the conventional Decision Feedback Equalizer (DFE). In more, each filter can be linear or nonlinear.